WORK PLAN

FORMER BREMERTON MGP SITE
INCIDENT ACTION AND TIME CRITICAL REMOVAL ACTION

Prepared for

U.S. Coast Guard Sector Puget Sound

Prepared by

Anchor QEA, LLC, and

Aspect Consulting

November 2010

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Prepared for

U.S. Coast Guard Sector Puget Sound
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1 INTRODUCTION

Discovery of an abandoned and broken cement pipe in the intertidal area near the former location of the Bremerton manufactured gas plant (MGP) led to a determination by the U.S. Coast Guard (USCG) that prompt action is required to:

- Quickly determine, secure, and remove an ongoing source of contaminants to adjacent waters
- Address public safety and awareness

Accordingly, USCG issued Cascade Natural Gas Corporation (Cascade Natural Gas) an Administrative Order for a Pollution Incident (Order) to implement an Incident Action and Time Critical Removal Action (Action) under oversight of USCG. The order directs Cascade Natural Gas to:

1. Prevent further contamination of the marine environment by permanently securing the release of the MGP waste.
2. Remove the cement pipe and all visible MGP waste contamination from the marine environment.
3. Cleanup operations shall begin no later than 48 hours from the date of this order.
4. Submit a detailed work plan to USCG for removal of the MGP waste and associated pipe prior to conducting any operations.

At the time the Order was issued, it was presumed the abandoned pipe was the source of the MGP waste in the shoreline environment. Subsequent investigations have determined the pipe is unlikely to be the only source of MGP waste or other waste to the shoreline environment and there are likely multiple independent sources for such waste. The investigations have also shown it is not feasible to address the widespread waste in the shoreline environment as part of the immediate Action. Instead, the Action must necessarily focus on the abandoned pipe and the impacts presumed to have some connection to that pipe. Additional removal or remedial actions will be necessary in the future to address the broader impacts in the shoreline environment.

This Work Plan proposes a scope of work for the Action that satisfies the objectives of the Order. The Action includes the following key elements:

- Investigation of the location and orientation of the abandoned pipe
- Plugging of the pipe as close as feasible to the bluff
- Removal of all portions of the pipe from the new plug until the terminus of the pipe
- Backfilling of the excavation created by removal of the pipe
- Placement of an Organo-Clay mat over impacted sediments near the terminus of the pipe that have been observed to generate sheen with minimal disturbance
- Continued maintenance of a containment system until the Action is complete and field observations confirm the situation is stable

Upon satisfactory completion of the Action as described in this Work Plan, USCG will issue a written determination that the Order is satisfied. USCG plans to transfer lead agency status to the U.S. Environmental Protection Agency (EPA) after completion of the Action.

2 SITE DESCRIPTION AND PROJECT SCOPE

The former Bremerton MGP was located on the north shore of Dyes Inlet in Bremerton, Washington, between Thompson and Pennsylvania Avenues in West Bremerton (Figure 1). Land use in the vicinity of the former MGP is currently industrial and light commercial. Recently, an abandoned 12-inch concrete pipe in the intertidal area was observed to be the apparent source of product and intermittent sheens on surface water of Dyes Inlet. It is presumed the pipe has some connection to the former MGP. The property where the former MGP was situated plus all areas affected by waste originating from the former MGP, whether in the upland or shoreline environments, are collectively considered the Site for purposes of this Work Plan. That portion of the Site where the pipe is located is shown on Figure 1.

This Work Plan details the Action necessary to control ongoing releases from the abandoned pipe. The area where the Action will occur is shown on Figure 2 (Action Area). The Work Plan does not apply to other areas of the Site or to other sources or release mechanisms other than the pipe. Future response actions will be required at the Site after completion of the Action. Such future actions will be conducted under one or more separate agreements with EPA or the Washington Department of Ecology (Ecology). These future actions will include determination of the nature and extent of the MGP waste, risk evaluations, and the assessment and identification of appropriate next steps.

2.1 Work Plan Organization

This Work Plan is divided into the following sections:

- Section 3: Overview of Incident Action and Time Critical Removal Action
- Section 4: Applicable or Relevant and Appropriate Requirements
- Section 5: Access to Action Area
- Section 6: Health and Safety
- Section 7: Containment and Spill Response
- Section 8: Site Preparation
- Section 9: Securing Location of 12-inch Pipe and Plug Location
- Section 10: Removal of 12-inch Pipe
- Section 11: Backfill Excavation Areas
- Section 12: Handling, Transport, and Disposal of Pipe and Sediments

- Section 13: Placement of Organo-Clay Mat
- Section 14: Completion of Incident Action and Time Critical Removal Action
- Section 15: Post-completion Inspections
- Section 16: Schedule

3 OVERVIEW OF INCIDENT ACTION AND TIME CRITICAL REMOVAL ACTION

Past actions performed by USCG and EPA have involved investigation of the pipe and surrounding sediment, removal of a 4-foot section and plugging of the pipe ends in that area, and installation and maintenance of a containment system to limit the potential release of product or sheen into Dyes Inlet. Figure 3 shows previous sediment sample locations and total polycyclic aromatic hydrocarbon (PAH) concentrations in those sediments. The containment system consists of a hard boom, oil absorbent tubes, and a temporary silt fence. Under direction of USCG, the containment system was maintained by Ballard Diving & Salvage (Ballard). Ballard periodically replaced oil absorbent tubes, repositioned the booms after rough water conditions, and confirmed the integrity of the pipe plug. Ballard was also on-call for spill response in the event conditions warranted such a response. Cascade Natural Gas will assume responsibility for maintenance of the containment system and any necessary spill response as part of the Action.

The scope of the Action has necessarily been dictated in large part by feasibility and constructability considerations, including the following:

- Time limitations for doing work near the 0 mean lower low water (MLLW) elevation given the extent of low tides and the fact that these tides occur at night
- Minimizing the number of nights that intertidal work is required
- Minimizing the potential for mobilization of contaminants into adjacent waters
- Minimizing exposure of the ecological environment to mobilized contaminants

3.1 Elements of Incident Action and Time Critical Removal Action

The Action, including contingencies, will include the following elements:

1. Erect and maintain improved signage at the Site until the Action is complete to increase public safety and awareness and discourage human contact with the abandoned pipe or affected sediments.
2. Locate and plug the pipe as close to the bluff as feasible (approximately 40 lineal feet from the vegetated shoreline) taking special precautions to not impact other unidentified pipes. Spill response capabilities will be in place during this activity.
3. Establish staging area on the uplands immediately above the affected area of the beach and improve access to the staging area by clearing Scotch Broom and shrubs

and placing gravel on an existing road (Figure 2). No modification of the shoreline will be performed other than improving temporary worker access to the beach. The potential for upland erosion will be mitigated with the placement of silt fences, jute matting, and hydroseed.

4. Mobilize excavation equipment to the upper beach area by crane methods.
5. Due to limitations for doing work near the 0 MLLW elevation given the extent of low tides and the fact that these tides occur at night, the pipe must be excavated in 4-foot sections and all sediments removed as part of the excavation must be placed directly into a lined transfer box to contain any excess water. Spill response capabilities will be in place throughout the excavation activities, including the use of oil absorbent pads in each 4-foot long excavation. Pipe sections will be placed in a separate container from removed sediments so any sections containing sludge can be profiled and disposed of separately. Once filled, the transfer box will be lifted to the upland staging area and placed onto a truck for final handling, profiling, transport, and disposal at a Subtitle D landfill.
6. The excavations will be backfilled with clean beach material stockpiled in the upland staging area.
7. After completion of the excavation activities, Organo-Clay mats will be placed over a portion of the sediments in the vicinity of the pipe terminus that have been observed to generate sheen with minimal disturbance (Figure 4). Designed to adsorb low soluble organics (for example, oil and PAHs), these mats have Organo-Clay encapsulated between two layers of geotextile and are available in 100-foot by 15-foot panels. Based on time limitations and low tide elevations, it is expected that four 50-foot by 15-foot panels can be placed starting at about -1 MLLW. Each panel will then be extended 50 linear feet up slope. Each panel will overlap approximately 1-foot with adjacent panels. The actual lower elevation of the panels will be determined during construction. To the degree possible, the condition of sediments beyond the extent of the panels will be documented.
8. Before the lower extent of the panels are inundated by the tide, clean beach material will be placed (moving up slope) at a nominal thickness of 12-inches (plus or minus 2-inches). Starting at the edge of the panels the beach material will be feathered for approximately another 10 feet (Figures 4 and 5). Along with the Organo-Clay mat,

approximately 300 cubic yards of clean beach material will be used to cover the current substrate.

9. After installation of the Organo-Clay mat, the in-water containment system will be repositioned around the mat area for an estimated four weeks. The in-water containment system will be inspected twice a week during those four weeks. As part of those inspections, the inspection team will check the integrity of the new pipe plug. The containment system will be decommissioned if there is no observation of product or sheen on the water for four consecutive inspections. Inspections will continue once a week for an additional four months after decommissioning of the containment system to ensure the new pipe plug is effective and no product or sheening is observed in the water. If such conditions are observed, additional actions will be discussed with EPA.

Additional details for the key activities are detailed in the following sections.

4 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The Action will need to satisfy the substantive provisions of applicable or relevant and appropriate requirements (ARARs). The ARARs that have been determined by USCG to potentially apply to the Action are shown in Table 1. USCG is conducting the consultations it deems necessary with federal, state, and local resource and regulatory agencies (including the Suquamish Tribe) to address the ARARs. The Action addresses the known ARARs by prescribing best management practices (BMPs) to be observed during performance of the Action.

The identified BMPs include those recommended by the Washington Department of Fish and Wildlife (WDFW) and Brad Martin of Ecology. During implementation of the Action, an on-site Cascade Natural Gas representative (construction manager) will track daily operations and compliance with the identified BMPs.

Table 1
Applicable or Relevant and Appropriate Requirements

ARAR	Agency	Trigger	Notes
Section 404, Clean Water Act	U.S. Army Corps of Engineers (USACE)	Work in waters of United States, including wetlands	**Contact:** Jess Jordan 206-439-4536 J.Jorda@usace.army.mil
Section 10 Rivers and Harbors Act	USACE	Placing structure or fill in waters of United States	
Migratory Bird Treaty Act	U.S. Fish and Wildlife Service (USFWS)	Federal action or permit that affects listed species	
Endangered Species Act documentation	U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Services (NMFS)	Federal action or permit that affects listed species	
Section 106, National Historic Preservation Act	USACE in consultation with Washington State Department of Archaeology and Historic Preservation, and Tribes	Federal undertaking or permit	
Water Quality Certification (Section 401)	Ecology	Applying for a federal license or permit for any activity that could cause a discharge of dredge or fill material into water or wetlands, or excavation in water or wetlands.	**Contact:** Brad Martin 425-649-7092 425-941-7698 (cell) bmar461@ecy.wa.gov Input on BMPs pending
Hydraulic Project Approval	WDFW	Work that uses, diverts, obstructs or changes the natural flow or bed of state waters	**Contact:** Chris Waldbillig 360-874-7258 360-480-8128 (cell) Chris.Waldbillig@dfw.wa.gov

ARAR	Agency	Trigger	Notes
Aquatic Use Authorization or Easement Renewal	Washington State Department of Natural Resources (WDNR)	Use of state-owned aquatic lands	
State Environmental Policy Act (SEPA) review	City of Bremerton	Development project greater than $2,500, and not meeting exemption criteria	
Shoreline Substantial Development	City of Bremerton	Work within 200 feet of shoreline that does not meet exemption standards	
Critical Areas Ordinance Compliance	City of Bremerton	Work in or adjacent to designated critical areas (for example, wetlands, streams, and steep slopes)	
National Pollutant Discharge Elimination System (*NPDES*) Permit	Ecology	Construction activity that creates more acres of land through clearing, grading, excavating, or stockpiling of fill material; construction stormwater enters waters of the state	
Emergency Section 7 Consultation	USFWS and NMFS		

5 ACCESS TO ACTION AREA

Cascade Natural Gas, with the help of USCG and EPA, has secured the access necessary to implement the Action. Access has been granted by WDNR for the intertidal area, Natacha Sesko for the primary portion of the upland staging area and the McConkey Family Trust for the remainder of the upland area.

6 HEALTH AND SAFETY

The Health and Safety Plan (HASP) developed for the Action is provided in Appendix A. The contractor(s) retained by Cascade Natural Gas to implement the Action will be required to submit their own health and safety plans (consistent with the HASP), before commencing work at the Site.

7 CONTAINMENT AND SPILL RESPONSE

The containment system consists of a hard boom, oil absorbent tubes, and a temporary silt fence. Under direction of USCG, the containment system was maintained by Ballard. Ballard periodically replaced oil absorbent tubes, repositioned the booms after rough water conditions, and confirmed the integrity of the pipe plug. Ballard was also on-call for spill response in the event conditions warranted such a response.

Cascade Natural Gas has entered a contract with Ballard and has assumed responsibility for maintenance of the containment system and any necessary spill response as part of the Action. Ballard will be on-call to provide spill response capabilities during performance of the Action. Until the Action is complete, Cascade Natural Gas will have a team inspect the containment system each low tide with the purpose of:

- Verifying the hard boom and oil absorbent booms are in place
- Verifying there is no obvious change in site conditions (for example, significantly more sheening)
- Verifying that the existing pipe plug is still in place and effective

If any of these observations require action, Cascade Natural Gas will direct Ballard to take the appropriate action immediately. The inspection team will maintain a log and will contact MST2 Varela (response supervisor on scene) directly at 415-720-4169 if anything significant is observed until the intertidal work begins. The inspection team will operate under the rules and procedures set forth in the HASP established for the Site (Appendix A).

The containment system will be repositioned during the excavation activities and placement of the Organo-Clay mat. After installation of the Organo-Clay mat, the in-water containment system will be repositioned around the mat area for an estimated four weeks. The in-water containment system will be inspected twice a week during those four weeks. As part of those inspections, the inspection team will check the integrity of the new pipe plug. The containment system will be decommissioned if there is no observation of product or sheen on the water for four consecutive inspections.

Inspections will continue once a week for an additional four months after decommissioning of the containment system to ensure the new pipe plug is effective and no product or sheening is observed in the water. If such conditions are observed, additional actions will be discussed with EPA.

8 SITE PREPARATION

Cascade Natural Gas will establish a staging area on the uplands immediately above the affected area of the beach (Figure 2). Cascade Natural Gas will improve access to the staging area by clearing Scotch Broom and shrubs and placing gravel on an existing road. Site preparation activities will be performed during daylight hours. No modification of the shoreline will be performed other than improving worker access to the beach, which is a health and safety concern.

Other activities include:

- Setting up a forward command and communication center and sanitation facilities (portable toilets)
- Improving temporary access for workers to the beach from the uplands (for example, switch back path or temporary stairway with handrail).
- Installing a perimeter silt fence for erosion control
- Stockpiling backfill material in upland staging area
- Setting up light plants to illuminate the intertidal area
- Positioning a boom truck in material transfer area
- Mobilizing equipment to the upland staging area
- Setting up a water containment and management system

9 SECURING LOCATION OF 12-INCH PIPE AND PLUG LOCATION

An initial activity of the Action will be to excavate at the toe of the bluff to verify the upland alignment of the pipe and the appropriate location for a permanent plug. The objective is to plug the pipe as close to the bluff as feasible taking special precautions to not impact other unidentified pipes. This work was completed on October 27, 2010. The proposed location of the new plug is shown on Figure 4.

Before excavation commences, it will be necessary to remove the existing plug, drain off any water in the pipe, and install the new plug to contain any continuing flow from upland areas. Spill response capabilities will be in place during these activities.

10 REMOVAL OF 12-INCH PIPE

After the pipe is plugged, excavation of the pipe and adjoining sediments will commence and proceed toward the water until the end of the pipe is reached. The excavation will follow the receding tide to maximize the amount of removal during the low tide period. Due to the seasonal low tides, which will occur between 2200 and 0600 hours, excavation of the pipe and sediments must occur in small 4-foot sections (excavations are expected to range from 4 feet wide by 4 feet deep to as shallow as 1 foot deep near the outfall). The total volume of material to be removed is expected to be approximately 30 cubic yards.

Spill response capabilities will be in place throughout the excavation activities, including the use of oil absorbent pads in each 4-foot long excavation. Excavated material will be placed immediately into a lined transfer box to contain excess water. Once filled, the box will be lifted to the upland staging area for direct transfer to a truck for water management, final handling, transport, and disposal at a Subtitle D landfill.

Plugging and removal of the pipe will permanently secure the release of MGP waste from the pipe.

10.1 General Best Management Practices

Potential BMPs that will be observed during excavation and backfilling activities include:

- Equipment will not be in use while tidal waters occupy the area.
- Material will be transferred to a lined transfer box, which will be isolated from marine waters.
- Material will not be stockpiled below the ordinary high higher water (OHHW) mark.
- Oil absorbing pads will be placed as needed to absorb any free product in the excavation trench. Linear silt and oil booms will be set on the outside perimeter of the excavation trench to retain any potential sheen through the first few tide cycles after excavation.
- Cascade Natural Gas will require its contractor to prepare and deploy a Spill Prevention Control and Countermeasures Plan (SPCC) consistent with Ecology regulations.
- Excavation equipment will be decontaminated following each work cycle.

- Construction personnel will limit access to the beach using designated access areas.
- Construction personnel will be trained in hazardous material handling and will be equipped with appropriate response tools, including absorbent oil booms.
- Cascade Natural Gas will require its contractor to inspect fuel hoses, oil or fuel transfer valves, and fittings on a regular basis for drips or leaks in order to prevent spills into the surface water.
- Impacted materials will be removed from the Site and disposed of at an approved location.
- Removal of clean sediments and organic matter will be minimized.
- In order to reduce the potential impacts on listed species, as much work as possible will be conducted in times of low tide.
- If the excavation activities create excessive turbidity and/or surface sheens that escape the limits of the containment boom, Cascade Natural Gas will direct its contractor to cease the activity and make necessary corrections.
- Oil-absorbent pads will be available to be deployed in the event of sheen created during work.

10.1.1 Additional Best Management Practices Proposed by WDFW

Additional BMPs proposed by WDFW include:

- Contaminated materials shall be removed from the Site and disposed of at an approved location.
- Equipment shall not work while tidal waters occupy the area, with the exception of work being done on a barge in isolation of marine waters such as inside cofferdams or isolated steel sheet pile.
- Fines shall not be stockpiled below the ordinary high water level (OHWL); they shall be placed on a barge or in a skip box, isolated from marine waters and above the OHWL.
- Equipment used for this project shall be free of external petroleum-based products while working around marine waters. Accumulation of soils or debris shall be removed from the drive mechanisms (wheels, tires, tracks, etc.) and undercarriage of equipment prior to its working below the ordinary high water line. Equipment shall

be checked daily for leaks and any necessary repairs shall be completed prior to commencing work activities along the shoreline.

- Excavated materials shall not be stockpiled below the ordinary high water line; they shall be hauled off site and disposed of at an approved location.
- Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the water.
- Access to the beach shall be minimum necessary, trail width, and shall not use minimal angular rock or treated wood.
- Removal or destruction of overhanging bankline vegetation shall be limited to that necessary for the construction of the project. Vegetation material removed from the bluff for trail access shall be minimum possible and left in as whole pieces as possible, for example trees shall retain root balls and as much of the trunk as possible. This material shall be placed on the beach on the waterward side of the bulkhead.
- The beach area excavated for contaminated sediment removal shall be backfilled with material listed in work plan, additionally:
  - Nourishment/beach mix shall not contain silty or clay type soils.
  - Nourishment/beach mix shall not contain any angular type rock.
  - Nourishment/beach mix shall be spread along the entire length and width of the affected project area.
- Upon completion of excavation, and replacement of contaminated materials, the shoreline shall contain no pits, potholes, or large depressions to avoid stranding of fish.
- USCG shall set up an on-site meeting with WDFW's Area Habitat Biologist as soon as possible but not less than 30 days after work is completed.

11 BACKFILL EXCAVATION AREAS

After excavation of each trench segment and prior to tide inundation, each excavation will be back filled with 10-inch Streambed Cobbles per Section 9-03.11(2) of the Washington State Department of Transportation (WSDOT) handbook (beach material). The backfill will be placed from the bottom of the excavation to within 2 feet of the previous established beach grade. All excavations will be filled prior to tidal inundation. The backfill material will be a well-graded streambed cobble that passes all material smaller than 10 inches. No angular rock will be placed on the beach.

The top 2 feet of excavated area (for example, trench) and any area disturbed by equipment on the beach may be filled or covered with a smaller beach material (smaller beach material) similar to Table 2.

Table 2
Fill and Cover for Backfill Excavation (Smaller Beach Material)

Sieve Size	Percent Passing by Weight
2-inch	100
1-inch	60 to 100
1/2-inch	30 to 50
3/8-inch minus	0 to 30

The preceding specifications satisfy the BMPs proposed by WDFW for backfill.

12 HANDLING, TRANSPORT, AND DISPOSAL OF PIPE AND SEDIMENTS

Once filled, the transfer box will be lifted to the upland staging area. Free water will be removed from each box prior to transport from the site. A roll-off truck will be staged on site to move containers as needed. The box will be placed on a truck for delivery during daytime hours to a railroad loading facility, and hauled by rail to a Subtitle D landfill for disposal. Pipe sections containing sludge will be placed in a separate box and stored on site during characterization of the sludge. A sample of sludge will be analyzed to determine proper disposal and prepare a separate waste profile, if necessary. Disposal of the pipe sections and sludge will be determined once profiling is completed.

13 PLACEMENT OF ORGANO-CLAY MAT

After completion of the excavation activities and backfilling to establish original grades, Organo-Clay mats will be placed over a portion of the sediments in the vicinity of the terminus of the abandoned pipe (Figure 4). Designed by CETCO Sediment Remediation Technologies to adsorb low soluble organics (for example, oil and PAHs), these mats have Organo-Clay encapsulated between two layers of geotextile and are available in 100-foot by 15-foot panels. The Organo-Clay is formed by the modification of sodium bentonite with cationic surfactants. The Organo-Clay mats will immediately reduce the risk from product or sheening.

Based on time limitations and low tide elevations, it is expected that four 50-foot-by-15-foot panels can be placed starting at about -1 MLLW. Each panel will overlap approximately 1 foot with adjacent panels. Each panel will be staked in and then will then be extended 50 linear feet up slope from the -1 MLLW elevation. The actual lower elevation of the panels will be determined during construction based on Site conditions. Before the lower extent of the panels are inundated by the tide, clean beach material will be placed (moving up slope) at a nominal thickness of 12 inches (plus or minus 2-inches). This acts as ballast, protects the Organo-Clay mat, and creates a new habitat substrate. Additional panels will be available if Site conditions and tide windows warrant them.

Starting at the edge of the panels the beach material will be feathered for approximately another 10 feet (Figures 4 and 5). As described in Section 11, the beach material will be 10-inch Streambed Cobbles per Section 9-03.11(2) of the WSDOT handbook. This material is a well graded streambed cobble that passes all material smaller than 10 inches. Approximately 300 cubic yards of clean beach material will be used to replace the current substrate. Areas disturbed by equipment on the beach will be filled or covered with a smaller beach mix similar to the description in Section 11.

14 COMPLETION OF INCIDENT ACTION AND TIME CRITICAL REMOVAL ACTION

The Action will be deemed complete when the work activities described in Section 3.1 of this Work Plan are completed to the satisfaction of USCG (except for the post-completion inspections, which are described in more detail in Section 15). Within 30 days after completing the Action (that is, installation of the Organo-Clay mats), a report documenting the Action will be prepared and submitted to USCG for review and approval. Upon approval of the completion report, USCG will issue a written determination that the Order is satisfied. USCG plans to transfer lead agency status to EPA after completion of the Action.

The Action does not apply to areas of the Site other than the Action Area or to sources or release mechanisms other than the abandoned pipe. Future response actions will be required at the Site after completion of the Action. Such future actions will be conducted under one or more separate agreements with EPA or Ecology. These future actions will include determination of the nature and extent of the MGP waste, risk evaluations, and the assessment and identification of appropriate next steps.

15 POST-COMPLETION INSPECTIONS

After completion of the Action (that is, installation of the Organo-Clay mats), the in-water containment system will be repositioned around the Organo-Clay mats for an estimated four weeks. The in-water containment system will be inspected twice a week during those four weeks. As part of those inspections, the inspection team will check the integrity of the new pipe plug. The containment system will be decommissioned if there is no observation of product or sheen on the water for four consecutive inspections. Inspections will continue once a week for an additional four months after decommissioning of the containment system to ensure the new pipe plug is effective and no product or sheening is observed in the water. If such conditions are observed, additional actions will be discussed with EPA.

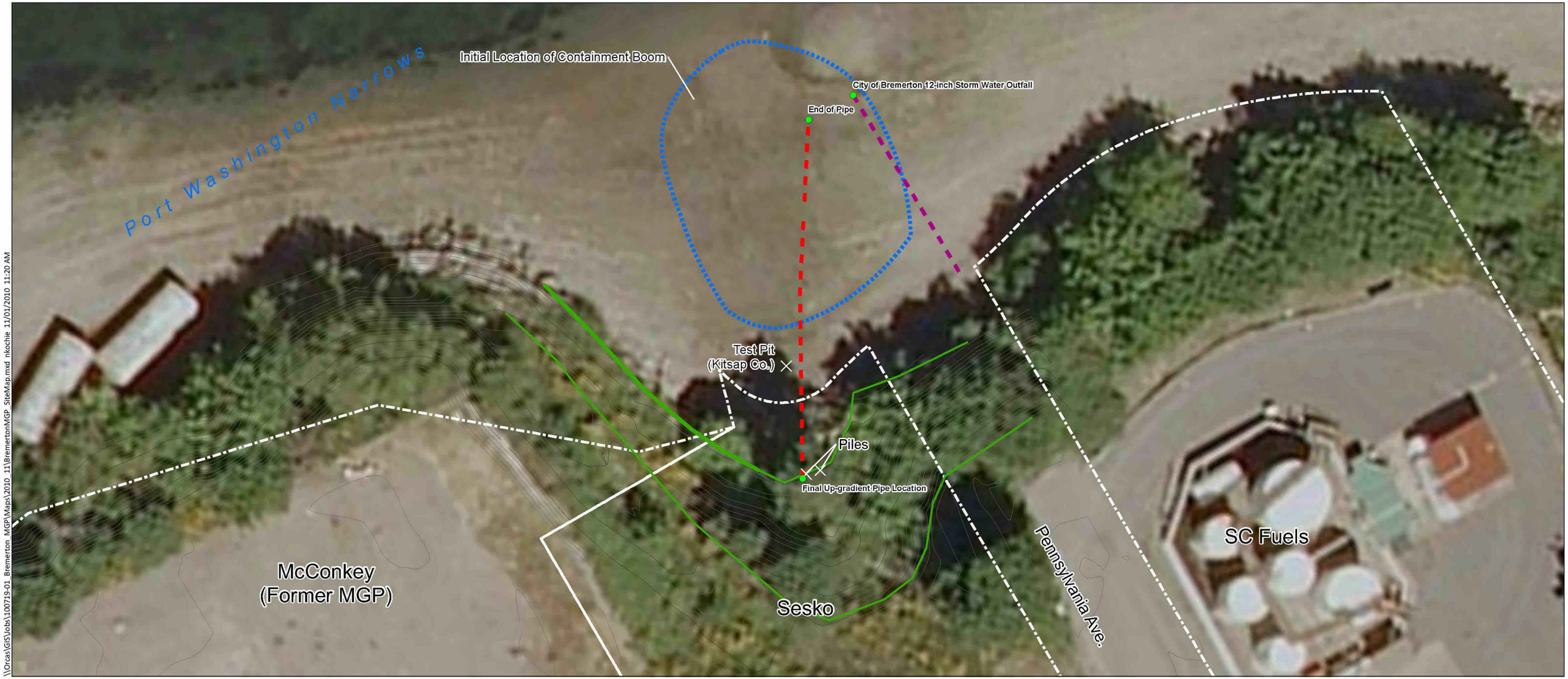
16 SCHEDULE

A proposed schedule of activities necessary to complete the Action is summarized in Table 3. Based on discussions with Cascade Natural Gas's contractor and depending on how the Action progresses, this schedule may be modified.

Table 3
Schedule of Incident Action and Time Critical Removal Action

Action Element	Start Date	Notes
Containment System Inspections – Cascade Natural Gas	Oct. 30, 2010 (during low tides)	USCG to be notified prior to inspections
Mapping, access analysis, and pipe surveying	Oct. 22, 2010	
Low tide inspection of visible pipe and access analysis	Oct. 23, 2010	
Utility locates performed in project area	Oct. 25, 2010	
Locate pipe as close to the bluff as possible	Oct. 27, 2010	Pipe determined to be greater than 7 feet below ground surface at toe of bluff. Pipe will be plugged 40 linear feet from bluff (Figure 4).
Pre-construction meeting	Nov. 4, 2010	Including Sesko and McConkey
Contractor mobilization, access improvements, and staging	Nov. 3-5, 2010	
Pipe removal, excavation, Organo-Clay mat placement, and beach material placement	Nov. 5-10, 2010	Construction to be completed between 2200 and 0600 due to low tides. Excavations to be backfilled prior to tidal inundation.
Material profile, handling, transport, and disposal (daytime)	Nov. 6-11, 2010	
Demobilization	Nov. 10-11, 2010	
Reporting of project completion, USCG Order satisfied, and future Site actions conducted under EPA or Ecology oversight.	Nov. 15, 2010	Completion report will be submitted 30 days after construction is complete. An on-site meeting with the WDFW Area Habitat Biologist will be scheduled.

FIGURES



12-inch Concrete Pipe Configuration

Assumed City of Bremerton 12-inch Storm Water Pipe Configuration

Approximate Top of Bank

Concrete Rubble Wall (height varies)

Initial Location of Containment Boom

Feet

0 15 30 45 60

NOTES:
1. Horizontal Datum: WA State Plane North Zone, NAD83, Feet.
2. Aerial photo © 2007 ESRI, i-cubed.
3. Base data provided by Aspect Consulting.

ANCHOR QEA

Figure 1
Site Map
Former Bremerton MGP Site
Bremerton, WA

DNR-00011850

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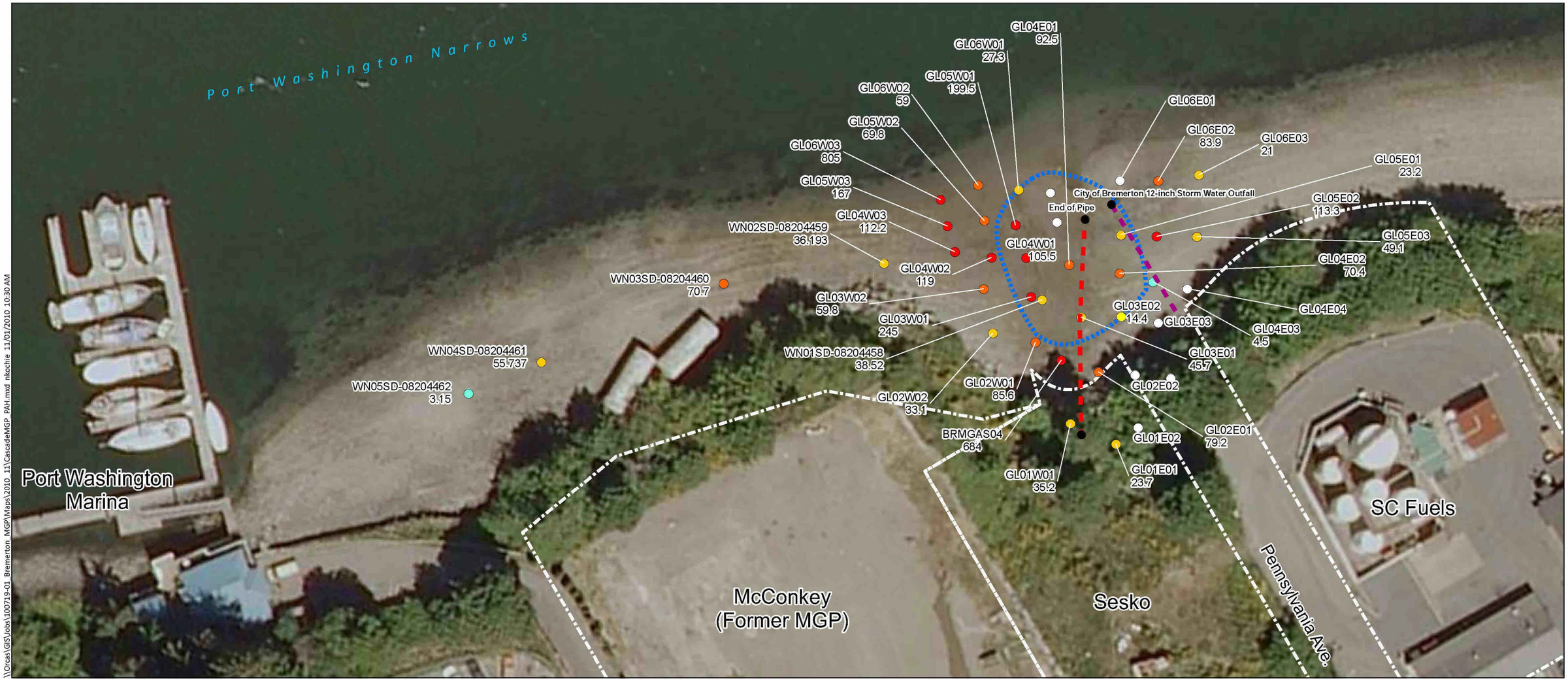
NOTES:
1. Horizontal Datum: WA State Plane North Zone, NAD83, Feet.
2. Aerial photo © 2007 ESRI, i-cubed.
3. Base data provided by Aspect Consulting.

Feet
0 25 50 75 100

Figure 2
Site Access and Staging
Former Bremerton MGP Site
Bremerton, WA

DNR-00011851



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Detected Total PAH Concentrations (mg/kg)

- No Data
- <1
- ≥1 - 10
- ≥10 - 20
- ≥20 - 50
- ≥50 - 100
- ≥100

- End of Pipe
- 12-inch Concrete Pipe Configuration
- Assumed City of Bremerton 12-inch Storm Water Pipe Configuration
- Approximate Location of Containment Boom

Feet
0 25 50 75 100

NOTES:
1. Horizontal Datum: WA State Plane North Zone, NAD83, Feet.
2. Aerial photo © 2007 ESRI, i-cubed.
3. Base data provided by Aspect Consulting.
4. Total PAH sample data provided by Aspect Consulting and EPA. Locations are approximate.

ANCHOR QEA

Figure 3
Total PAH Sediment Sample Locations
Bremerton Former MGP Site
Bremerton, WA

DNR-00011852

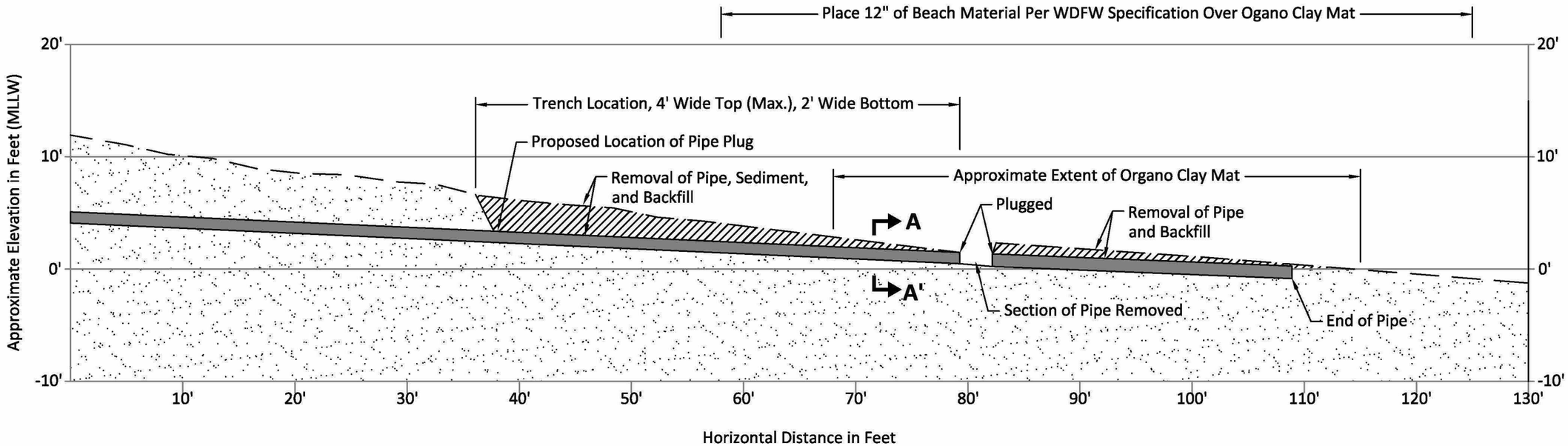
ANCHOR QEA

NOTES:
1. Horizontal Datum: WA State Plane North Zone, NAD83, Feet.
2. Aerial photo © 2007 ESRI, i-cubed.
3. Base data provided by Aspect Consulting.

Feet
0 10 20 30 40

Figure 4
Pipe Removal and Mat Placement Plan
Former Bremerton MGP Site
Bremerton, WA

DNR-00011853

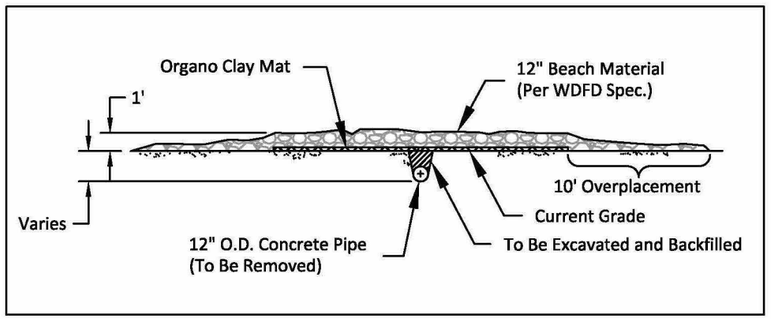


LEGEND:

Existing Mudline

12" Outside Diameter Concrete Pipe (4 Foot Sections)

NOTES:
1. Elevation estimated (MLLW).
2. Depths to top of pipe from probing performed on October 26, 2010 by Anchor QEA, Aspect, Cascade, and USCG.



Cross Section A-A'
Not to Scale

ANCHOR QEA

Figure 5
Beach Profile TCRA and Incident Action Summary
Former Bremerton MGP Site
Bremerton, WA

APPENDIX A
HEALTH AND SAFETY PLAN

APPENDIX B
ADMINISTRATIVE ORDER FOR A POLLUTION INCIDENT (OCTOBER 20, 2010)

U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Sector Puget Sound

1519 Alaskan Way South, Bldg 4
Seattle, WA 98134-1192
Staff Symbol: srm
Phone: (206) 217-6002
Fax: (206) 217-6178

16600

OCT 20 2010

ADMINISTRATIVE ORDER FOR A POLLUTION INCIDENT

Cascade Natural Gas Corporation
Ms. Abby Krebsbach
c/o CT Corporation Systems
1801 West Bay Drive NW
Suite 205
Olympia, WA 98502

SITUATION: You have identified yourself as a potential responsible party for an underground cement pipe that is releasing coal tar creosote, hereby identified as Manufactured Gas Plant (MGP) coal tar creosote waste, into the mid tidal zone of Sinclair Inlet, a navigable waterway of the United States. I have determined the underground pipe poses a substantial threat of creating a release of a hazardous substance into the environment.

DIRECTIONS: The Coast Guard is authorized by Section 106 of the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601) to act, consistent with the National Contingency Plan, to take any action necessary to protect the public health or welfare of the environment. In addition, the threat of a release may present an imminent and substantial endangerment to the public health or welfare of the United States, including fish, shellfish, and wildlife, public and private property, shorelines, beaches, habitats, and other living and nonliving natural resources under the jurisdiction or control of the United States. Among those who may be subjected to such endangerment are the waters of the Sinclair Inlet and the residents of Bremerton, Washington. Therefore I direct you to take the following actions:

1. Prevent further contamination of the marine environment by permanently securing the release of the MGP waste.

2. Remove the cement pipe and all visible MGP Waste contamination from the marine environment.

3. Cleanup operations shall begin no later than 48 hours from the date of this order.

4. You will submit a detailed plan to U.S. Coast Guard Sector Puget Sound for the removal of the MGP Waste and associated pipe prior to conducting any operations.

(Continued)

PENALTIES: Failure or refusal to provide all reasonable cooperation and assistance requested by the Federal On Scene Coordinator or failure or refusal to comply with this order will subject you to a civil penalty of up to $37,500 per day of violation.

Should you require further information regarding this matter, please contact Marine Science Technician Danielle Wood at the above address and telephone number.

Sincerely,

for

S. J. FERGUSON
Captain, U.S. Coast Guard
Federal On Scene Coordinator

Print name and sign Date Witness Date

Copy: Washington State Department of Ecology
Commander, Thirteenth Coast Guard District (drm)
United States Environmental Protection Agency
Kitsap County Department of Public Health

APPENDIX C
CASCADE NATURAL GAS RESPONSE TO ORDER (OCTOBER 29, 2010)

CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.
In the Community to Serve®

8113 W. GRANDRIDGE BLVD., KENNEWICK, WASHINGTON 99336-7166
TELEPHONE (509) 734-4500 FACSIMILE (509) 737-9803
www.cngc.com

Via Email and US Mail

October 29, 2010

S.J. Ferguson
Captain, U.S. Coast Guard
Federal On-Scene Coordinator
1519 Alaskan Way South, Building 4
Seattle, WA 98134-1192

RE: Administrative Order for Pollution Incident, Bremerton, Washington

Dear Captain Ferguson:

This letter provides Cascade Natural Gas Corporation's ("Cascade") formal response to the Administrative Order for a Pollution Incident ("AO") issued by the U.S. Coast Guard ("USCG") under Section 106 of the Comprehensive Environmental Response, Compensation, and Liability Act. The AO is dated October 20, 2010, and was served on Cascade on October 27, 2010.

As directed by the USCG, Cascade will conduct the time critical removal action (the "Removal Action") described in the Anchor QEA Work Plan for the Former Bremerton MGP Site ("Work Plan"), as finally approved by the USCG and the Unified Command. As you know, Cascade commenced work relating to the Removal Action on October 19, 2010, immediately after its first meeting with the Unified Command. Cascade continues work in preparation for the Removal Action. Cascade will conduct the Removal Action according to the Work Plan and the schedule provided in the Work Plan. The current schedule calls for mobilization of equipment to begin next week and for the pipe plugging, pipe removal, sediment removal, and sediment capping activities to commence the week following.

Cascade is undertaking the Removal Action as directed by the USCG and in recognition of the time critical nature of the situation. However, Cascade does not admit liability. Nor does Cascade admit any factual allegations in the AO.

Cascade understands the Removal Action outlined in the Work Plan is necessary and is consistent with the National Contingency Plan. Cascade further understands that the USCG, through the Unified Command, is coordinating with federal, state and local agencies on best management practices and other measures necessary to meet the substantive requirements of applicable or relevant and appropriate requirements, and that such measures will be incorporated into the approved Work Plan. Finally, Cascade understands that its completion of the work described in the Work Plan will stabilize the site and will fully satisfy the requirements of the AO. Any subsequent removal or remedial action at the site will be conducted under the oversight of the U.S. Environmental Protection Agency.

Please do not hesitate to contact me with any questions.

Sincerely,

CASCADE NATURAL GAS CORPORATION

K. Frank Morehouse by AJS

K. Frank Morehouse
Executive Vice President and General Manager

cc: Danielle Wood, USCG
Kathy Parker, EPA
Elizabeth McKenna, EPA
Abbie Krebsbach, Cascade
Kalle Kuether, Cascade
Dan Kuntz, Cascade
Howard Jensen, Tupper Mack Brower Jensen Wells
Andy Salter, Salter Joyce Ziker